

Date: Monday, 07/04/2008 12:46:00 PM
 User: Linda Lacelle

Process Sheet

Customer :	CU-DAR001 Dart Helicopters Services	Drawing Name :	BK117 SKIDTUBE ASSEMBLY
Job Number :	38440		
Estimate Number :	12899		
P.O. Number :		Part Number :	D117762011
This Issue :	07/04/2008	S.O. No. :	
Prsht Rev. :	NC	Drawing Number :	N/A
First Issue :	//	Project Number :	N/A
Previous Run :	33139	Drawing Revision :	
	Type :	Material :	
	LANDING GEAR	Due Date :	18/04/2008
Written By :		Qty:	1 Um: Each
Checked & Approved By :			
Comment :	Est Rev:A 07.06.11 New Issue EC		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	DC	DOCUMENT CONTROL
-----	----	------------------



Comment: DOCUMENT CONTROL

Photocopy bluefile & type labels per PPP-D117-762-011 CHG001

2.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1

Pull from HAI:

1 x D117-762-041 B33139

3.0	D117762041	Replacement Skidtube
-----	------------	----------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
 b/n 33139

PARTS CHANGED FOR HAI: (FOR TRACEABILITY PURPOSES)

1 X D2965 B36033
 1 X D3508-13 B36416
 1 X D3508-3 B31196
 1 X D3558-3 B29999
 1 X D2971 B33221
 1 X D3662-3 B37190
 3 X D3662-1 B37189

4.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
-----	-----------------	----------------------------



Comment: HAND FINISHING RESOURCE #1

REMOVE FOLLOWING PARTS FROM SKID
 AND DISCARD:

- ALL BOLTS AND WASHERS SECURING WEARPLATES

Handwritten: sand down & repaint white per ASTM D5505

Handwritten: M107550

Handwritten: 08-04-09

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38440

Part Number: D117762011

Job Number:



Seq. #:

Machine Or Operation:

Description :

- BOLTS AND WASHERS SECURING AFT CAP

ADD NEW HARDWARE TO REPLACE ABOVE
AS FOLLOWS:

28 X AN3C4A
28 X AN960C10L
2 X AN3-5A
2 X AN960JD10L

TO COMPLETE TUBE:

2 X ALS4-428-165
2 X AN4-4A
2 X AN960JD416L
2 X D3492-049
2 X D3492-051
6 X D3492-053

(X36) AL57-1032-130/M105855

1-D3508-11 / B 356415 (1-D3508-3)
1-D3558-11 / B 36419 (B 31196)
1-D3558-13 / B 36418
1-D3508-13 / B 36416
1-D3508-9 / B 36417
1-D3558-9 / B 36420
1-D3558-3 / B 29999
1-D29653 / B 29993

5.0

AN3C4A

BOLT



Comment: Qty.: 28.0000 Each(s)/Unit Total: 28.0000 Each(s)
BOLT M107376 JJ

6.0

AN960C10L

washer



Comment: Qty.: 28.0000 Each(s)/Unit Total: 28.0000 Each(s)
washer M107376 JJ

7.0

AN35A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)
Bolt M100188 JJ

8.0

AN960JD10L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)
Washer M104885 JJ

9.0

ALS4428165

Inserts



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)
Inserts M6989 JJ 08-04-10 (RC)

Date: Monday, 07/04/2008 12:46:01 PM
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Process Sheet

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Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38440

Part Number: D117762011

Job Number:



Seq. #:

Machine Or Operation:

Description :

10.0

AN44A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
Bolt M10(29) 911

11.0

AN960JD416L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
Washer M107008 912

12.0

D3492049

PLUG ASSEMBLY



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
PLUG ASSEMBLY B37288 911

13.0

D3492051

PLUG ASSEMBLY



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
PLUG ASSEMBLY B37289 911

14.0

D3492051

PLUG ASSEMBLY



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
PLUG ASSEMBLY B37289 911

15.0

D3492053

PLUG ASSEMBLY



Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)
PLUG ASSEMBLY B37390 911

PTO

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5 08/01/11 (41)

17.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1
pick packing kit:

15.1 wing with K

M 107385

~~28~~ 08-04-10 (X1)

Date: Monday, 07/04/2008 12:46:01 PM
User: Linda Lâcelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38440

Part Number: D117762011

Job Number:



Seq. #:

Machine Or Operation:

Description :

18.0

D35121

WEARPLATE



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

WEARPLATE

Batch: B37618

LC 8/4/18

19.0

AN960C10L

washer



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Washer

Batch: M167321

LC

20.0

AN3C4A

BOLT



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

BOLT

BATCH: M167376

LC

21.0

AN451A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

BATCH: M16662

LC

22.0

D2972

Bushing



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bushing

BATCH: B14103

LC

23.0

MS21042L4

Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Nut

BATCH: M166825

LC 8/4/14

24.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS



08/07/13

Date: Monday, 07/04/2008 12:46:01 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38440

Part Number: D117762011

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D135-751-011

Location: _____

PPP Rev: _____

PPPT *12/3* *U*

26.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



POSITIVE RECALL

EFFECTIVE

08.07.07

AUTH

U

RELEASED

DATE

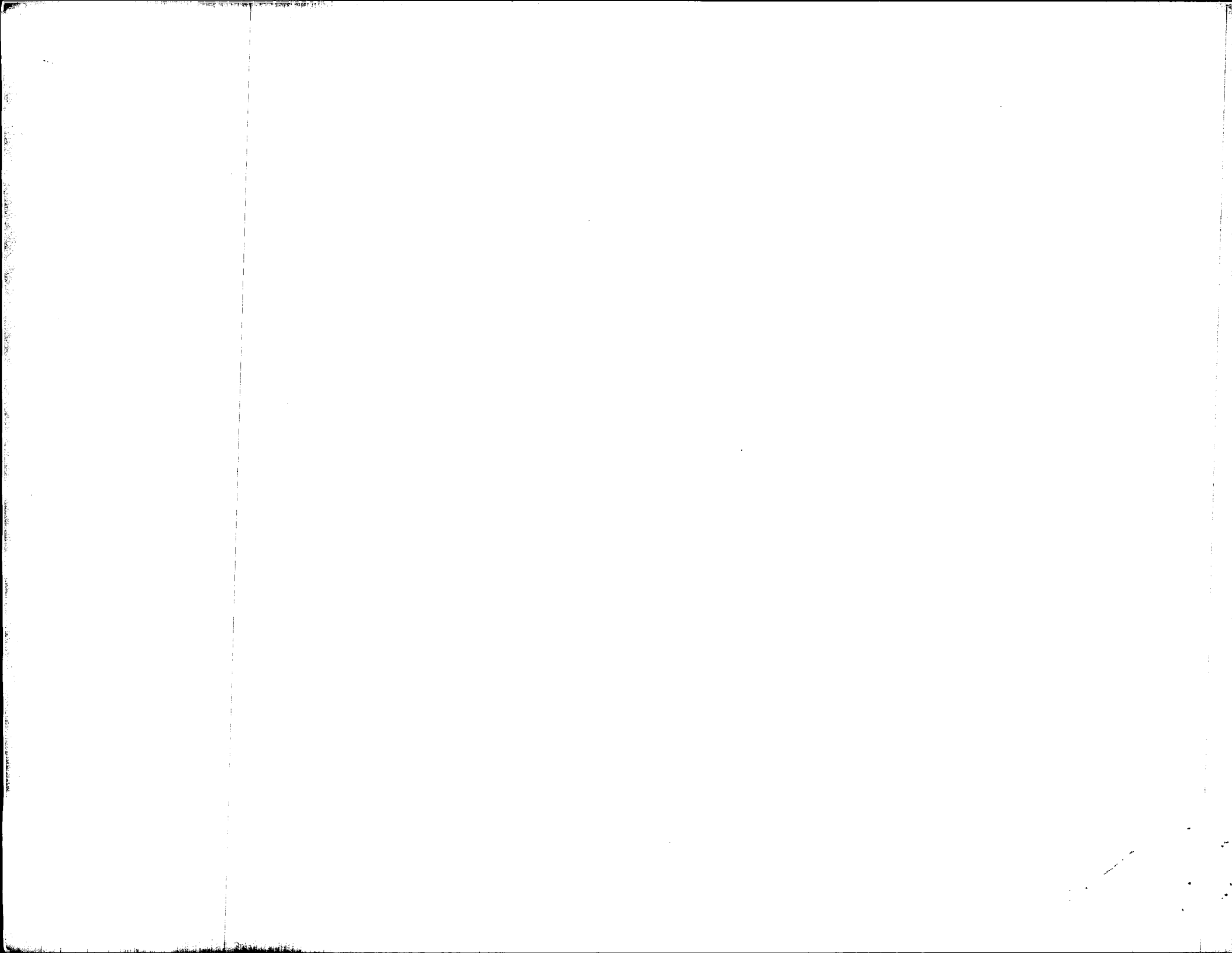
U

08.07.08

U

08.07.08

B 38440



REMOVE

AN3C4A

M103641

28

AN960C10L

M102473

28

AN3C4A

M103641

28

AN960C10L

M102473

~~28~~ 30

AN3CSA

M104118

28

Here @ Dart

REMOVE H00

AL54-428-165

2

AN3-SA

M100188

2

AN4-4A

M106918

2

AN96050416L

M106785

2

AN9605010L

M104385

2

AN3C4A

AN960C10L

ALUMINUM

M106330

A/R

AN3C4A

AN960C10L

28

AN3-SA

AN9605010L

28

AL54-428-165

2

AN4-4A

AN96050416L

2

D3492-049

2

-051

2

-053

2

~~NEW PARTS FOR 2ND 042-262-011~~

2ND

DART

D117-762-011 (QTY 2) (B33139)

REMOVE

~~D352~~
D3512-1 B3 REMOVE
AN4-S1A M1
D2972 B1
MS21042L4 M1 ADD
D3512-1 B36180 (2)

~~D3512-1~~ B36180

~~B3449~~
~~B36180~~

A

PICK
KIT

D117-762-041 (QTY 2) (B32910)

MS21042L4
AN304A
AN960C10L

ADD

REMOVE

D2965 B28959 * 2

D3508-13 B36416 * 2
B33012

2ND { D3508-3 B33020 1
D3558-3 B33021 1

AN4-S1A M103648 2
D2972 B14103 4
MS21042L4 M110743 2

D2965 B36033 * 2 1

D3508-13 B36416 * 2 2

D3508-3 B31196 1 Here

D3558-3 B29999 1

D2971 B33221 2 2 tube

D3662-3 B37190 2 "

D3662-1 B37189 6 "

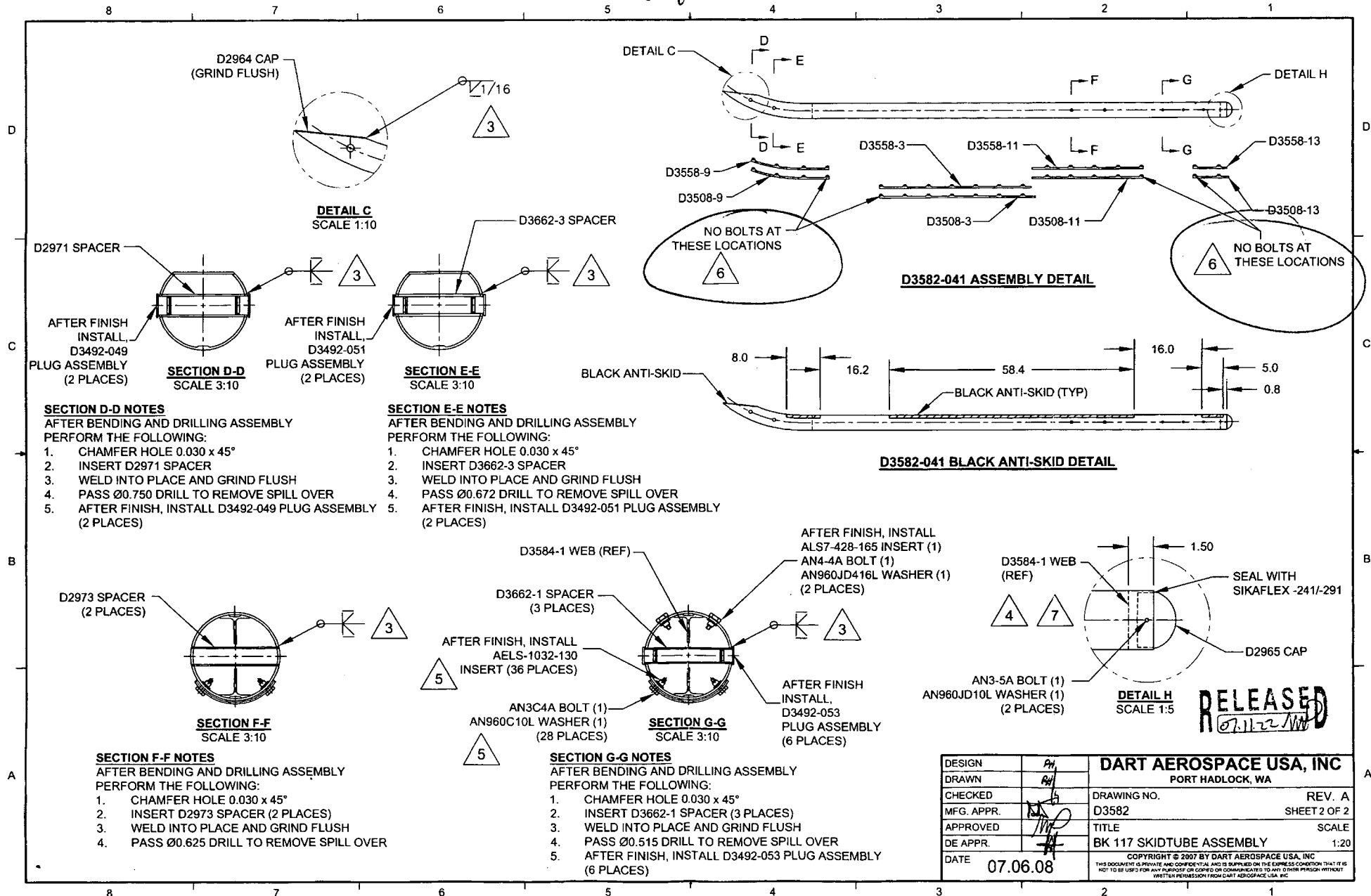
D3492-049 B37288 2 1 tube

D3492-051 B37289 2 1 tube





D3492-053 B37474 6 1 tube

AN4-S1A
D2972
MS21042L4

W/O 38440



RELEASED

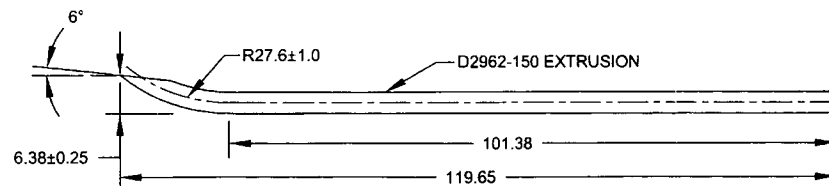
DESIGN	AM	DART AEROSPACE USA, INC	
DRAWN	AM	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D3582	SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		BK 117 SKIDTUBE ASSEMBLY	1:20
DATE	07.06.08	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC	
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PARTS LIST FOR D3582-041 SKIDTUBE ASSEMBLY

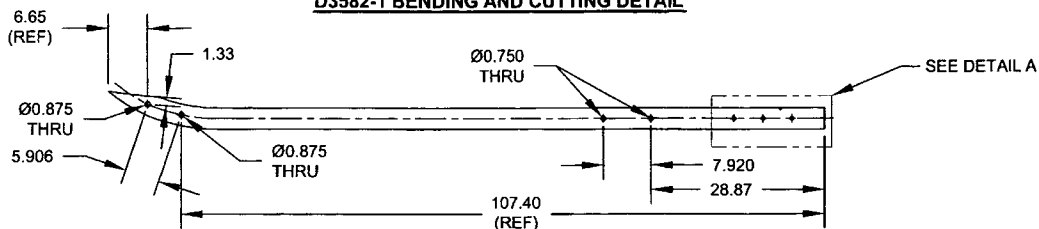
Qty	Part Number	Description
X	D3582-041	SKIDTUBE ASSEMBLY
1	D2962-150	EXTRUSION
1	D2964	CAP
1	D2965	CAP
1	D2971	CROSS BOLT SPACER
2	D2973	CROSS BOLT SPACER
2	D3492-049	PLUG ASSEMBLY
2	D3492-051	PLUG ASSEMBLY
6	D3492-053	PLUG ASSEMBLY
1	D3508-3	WEARPLATE
1	D3508-9	WEARPLATE
1	D3508-11	WEARPLATE
1	D3508-13	WEARPLATE
1	D3558-3	GASKET
1	D3558-9	GASKET
1	D3558-11	GASKET
1	D3558-13	GASKET
1	D3584-1	WEB
3	D3662-1	CROSS BOLT SPACER
1	D3662-3	CROSS BOLT SPACER
36	AELS-1032-130	INSERT
2	ALS7-428-165	INSERT
28	AN3C4A	BOLT
2	AN3-5A	BOLT
2	AN4-4A	BOLT
28	AN960C10L	WASHER
2	AN960JD10L	WASHER
2	AN960JD416L	WASHER

GENERAL NOTES:

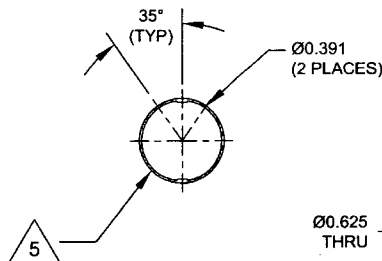
- ALL DIMENSIONS ARE IN INCHES
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- WELDING TO BE DONE PER DART QSI 004.
- INSERT D3584-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- USE DART DRILL TEMPLATE DT8900 TO LOCATE AND DRILL Ø0.297 HOLES (36 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION G-G (36 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/-291.
- DO NOT INSTALL AN3C4A BOLTS AND AN960C10L WASHERS IN INDICATED LOCATIONS.
- FINISH:
 - CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3584-1 WEB.
 - POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3.
 - ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4



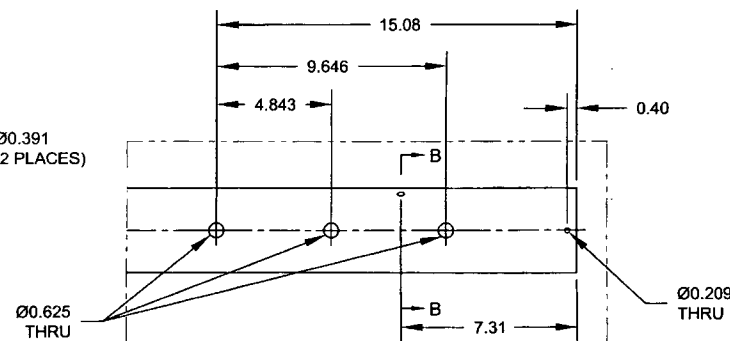
D3582-1 BENDING AND CUTTING DETAIL



D3582-1 DRILLING DETAIL



SECTION B-B
SCALE 1:5



DETAIL A
SCALE 1:5

RELEASED
07.11.22

A	NEW ISSUE	PH	07.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN	SA		
DRAWN	PAH		
CHECKED	J		
MFG. APPR.	W		
APPROVED	W		
DE APPR.	W		
DATE	07.06.08		

DART AEROSPACE USA, INC	REV. A
PORT HADLOCK, WA	SHEET 1 OF 2
DRAWING NO. D3582	SCALE 1:20
TITLE BK 117 SKIDTUBE ASSEMBLY	

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Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D117-762-011 PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: A Date: 21/07/08
 QA: N/C Closed: _____ Date: _____

NCR: <u>38440</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
<u>08/04/08</u>	<u>4/0</u>	Paint/powder coat was found to have many deformations on the under side of the skin plate.	<u>[Signature]</u>	Strip entire plate with TA STRIP II	<u>M.H.</u> <u>08/04/08</u>	<u>[Signature]</u>	<u>[Signature]</u>	<u>[Signature]</u>
		<u>M107550.</u>	<u>[Signature]</u>	Re powder coat + comp walk as per Q51005	<u>M.H.</u> <u>08/04/08</u>	<u>[Signature]</u>	<u>[Signature]</u>	<u>[Signature]</u>
		<u>M107397-7</u>		Inspect QCS By QC.	<u>[Signature]</u> <u>08/04/08</u>	<u>[Signature]</u>		<u>[Signature]</u>

NOTE: Date & initial all entries

DART

DART AEROSPACE USA, INC.
110 Chimacum Creek Drive
Port Hadlock, WA 98339

Tel: 1 613 632 5200

Fax: 1 613 632 5246

e-mail: heli@dartaero.com<http://www.dartaero.com>

INSTALLATION INSTRUCTIONS

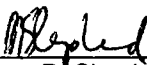
IIN-D117-762

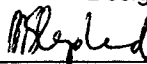
Skidtube Installations

EUROCOPTER BK 117 A-1/A-3/A-4/B-1/B-2/C-1 MODELS

38940
P24
06.07.10

Prepared By: 
P. Hum
Mechanical Designer

Checked By: 
D. Shepherd, P. Eng
Design Engineer

Released By: 
D. Shepherd, P. Eng
Design Engineer

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Revision: **A**

Date: 07.04.27

5.0 PARTS LIST

5.1 D117-762-011 Skidtube Parts List

Item	Qty -011	Qty -041	Part Number	Description
	X		D117-762-011	SKIDTUBE INSTALLATION
	1	X	D117-762-041	REPLACEMENT SKIDTUBE
1		1	D3582-041	SKIDTUBE ASSEMBLY
2	2		**1121-51002	SKID SHOE
3	2		**1121-51102	CLAMPING RING
4	8		**LN9380M8X45	HEXAGON BOLT
5	8		**LN9023A8-1.4544.9	LOCKING WASHER
6	8		**LN9025-0815K	WASHER (OR LN9025-0815L)
10		1	*D2965	CAP
11		2	***AELS-1032-225	INSERT
12		2	*AN3C5A	BOLT
13		2	*AN960C10L	WASHER
20A		1	*D3508-9	WEARPLATE
20B		1	*D3558-9	GASKET
21A		1	*D3508-3	WEARPLATE
21B		1	*D3558-3	GASKET
22A		1	*D3508-11	WEARPLATE
22B		1	*D3558-11	GASKET
23A		1	*D3508-13	WEARPLATE
23B		1	*D3558-13	GASKET
24		36	*AELS-1032-130	INSERT
25	8	28	*AN3C4A	BOLT
26	8	28	*AN960C10L	WASHER
27	2		D3512-1	WEARPLATE
30		2	*AELS-1032-130	INSERT
31		2	*AN4-4A	BOLT
32		2	*AN960JD416L	WASHER
40		2	*D3492-049	PLUG ASSEMBLY
41		2	***NAS1611-016	O-RING
42		2	*D3492-051	PLUG ASSEMBLY
43		2	***NAS1611-015	O-RING
44		6	*D3492-053	PLUG ASSEMBLY
45		6	***NAS1611-012	O-RING
50	2		AN4-51A	BOLT
51	4		D2972	BUSHING
52	2		MS21042L4	NUT (OR MS21042-4)

* PART IS INCLUDED WITH D3582-041 SKIDTUBE ASSEMBLY

** TO BE SUPPLIED BY CUSTOMER, LISTED AS REFERENCE ONLY

*** DENOTES PART IS INCLUDED WITH ASSEMBLY ABOVE

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Revision: A

Date: 07.04.27

38440
 08.07.10